



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,500	02/20/2004	Hideki Hirayama	10449-078001	7597
69713	7590	12/11/2007		
OCCHIUTI ROHLICEK & TSAO, LLP			EXAMINER	
10 FAWCETT STREET			BIBBINS, LATANYA	
CAMBRIDGE, MA 02138			ART UNIT	PAPER NUMBER
			2627	
			MAIL DATE	DELIVERY MODE
			12/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/783,500	Applicant(s) HIRAYAMA, HIDEKI	
	Examiner LaTanya Bibbins	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7, 8 and 10 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6 and 9 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In the remarks filed on September 19, 2007, Applicant amended claim 1 and submitted arguments for allowability of claims 1-3, 5, 6, and 9. Claims 1-3 and 5-11 are pending.

Response to Arguments

2. Applicant's arguments filed September 19, 2007 have been fully considered but they are not persuasive.

Applicant argues that while Hase discloses both an analog and a digital PLL "switching is not performed by clock signals." Applicant further argues that even if it would have been obvious to apply Tobita's use of a wobble signal to Hase's circuit containing both an analog and digital PLL, one still would not have arrived at the idea of "using the wobble signal to control the generation of a change-over timing signal."

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the switching being performed by clock signals, and using the wobble signal to control the generation of a change-over timing signal) are neither recited in the rejected claims nor disclosed in the specification. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Further, as stated in the previous office action and as noted by Applicant in the response, Tobita teaches a decoder based on an analog PLL while Hase discloses a

digital PLL circuit as well as a demodulator that is connected to both the digital and analog PLL circuits. The demodulator of Tobita samples the wobble signal using the clock signal generated by the analog PLL circuit. As appreciated by Applicant, Tobita discloses only an analog PLL and thus there is no need for switching. However, as also appreciated by Applicant, Hase discloses a demodulator that is connected to both a digital PLL and an analog PLL circuit. Hase discloses invoking either the analog or digital PLL circuits via a switching operation.

While Applicant argues that if one ***applied Tobita's use of a wobble signal to Hase's circuit*** containing both an analog and digital PLL, one would not have arrived at the idea of using the wobble signal to control the generation of a change-over timing signal, Examiner maintains that it would have been obvious to one of ordinary skill in the art at the time the invention was made ***to incorporate the use of both analog and digital PLL's as disclosed by Hase into the decoder of Tobita.***

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-3, 5, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tobita et al. (US Patent Number 6,385,257 B1) in view of Hase et al. (US Patent Number 5,937,020).**

Regarding claim 1, Tobita discloses a decoder for demodulating address information using a wobble signal formed on a track of an optical disk, the decoder comprising: an analog PLL circuit for generating a second clock signal and synchronizing the second clock signal with the wobble signal based on a difference between the phase of the wobble signal and the phase of the second clock signal (see Figure 41 element 103 and the discussion in column 1 lines 39-49); and a demodulator, the analog PLL circuit, the demodulator sampling the wobble signal using the second clock signal to demodulate the address information on the optical disk (see Figure 41 and the discussion in column 1 lines 39-58).

Tobita fails to disclose, but Hase does disclose a digital PLL circuit for generating a first clock signal (see Figure 3 element 3) and a demodulator, connected to the digital PLL circuit and the analog PLL circuit and configured to be able to switch between the first and second clock signals (see the synchronizing clock generator and timing controller in Figure 3 elements 2 and 43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate both the analog and digital PLL's of Hase into the decoder of Tobita. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to achieve phase synchronization at high-speed upon initialization (provided by the analog PLL) and achieve phase synchronization with high precision thereafter (provided by the digital PLL) as suggested by Tobita (column 10 lines 6-34).

Regarding claim 2, Tobita discloses a detection circuit for comparing the wobble signal and the second clock signal and detecting whether the second clock signal is synchronized with the wobble signal (see Figure 41 and the discussion in column 1 lines 39-49 and column 2 lines 34-37). Tobita fails to disclose but Hase discloses wherein the demodulator selects either the first clock signal or the second clock signal based on a detection result of the detection circuit (see the synchronizing clock generator and timing controller in Figure 3 elements 2 and 43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate selecting either the analog or digital PLL as taught by Hase in the decoder of Tobita. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to achieve phase synchronization at high-speed upon initialization (provided by the analog PLL) and achieve phase synchronization with high precision thereafter (provided by the digital PLL) as suggested by Tobita (column 10 lines 6-34).

Regarding claim 3, Hase discloses wherein the analog PLL circuit includes: a phase comparator for generating a phase difference signal in response to a difference between the phase of the wobble signal and the phase of a divisional clock signal generated by dividing the frequency of the second clock signal by a predetermined frequency dividing ratio (see Figure 15 elements 2014 and 2023 and the discussion in column 17 lines 6-25); a charge pump, connected to the phase comparator, for generating current in accordance with the phase difference signal (see Figure 15 element 2024 and the discussion in column 17 lines 6-25); a low pass filter, connected

to the charge pump, for generating voltage in accordance with the current of the charge pump (see Figure 15 element 2010 and the discussion in column 17 lines 6-25, specifically where the loop filter removes high-frequency components i.e. a low-pass filter); and a voltage-controlled oscillator, connected to the low pass filter, for oscillating in accordance with the voltage of the low pass filter and generating the second clock signal, wherein the detection circuit compares the wobble signal and the divisional clock signal and detects whether the second clock signal is synchronized with the wobble signal (see Figure 15 element 2011 and the discussion in column 17 lines 6-25).

Regarding claim 5, Hase discloses a first phase detector, connected to the digital PLL circuit, for detecting a phase inversion of the wobble signal based on the first clock signal (see Figure 15 element 2008); and a second phase detector, connected to the analog PLL circuit, for detecting a phase inversion of the wobble signal based on the second clock signal (see Figure 15 element 2014).

Regarding claim 6, Hase discloses a selector, connected to the first and second phase detectors, for selecting either the detected result of the first phase detector or the detected result of the second phase detector in accordance with a select signal (see the synchronizing clock generator and timing controller in Figure 3 elements 2 and 43).

Regarding claim 9, Tobita discloses wherein the analog PLL circuit generates the second clock signal as a reference signal (see Figure 41 where the analog PLL is used as a reference signal for the phase comparator and the discussion in column 1 lines 43-46).

Allowable Subject Matter

5. **Claims 7, 8, and 10** are allowed.

6. The following is an examiner's statement of reasons for allowance:

Regarding independent claim 7, none of the references of record, alone or in combination suggest or fairly teach a decoder for demodulating address information using a wobble signal including **a demodulator, connected to the digital PLL circuit, the analog PLL circuit, and the detection circuit, for sampling the wobble signal using the first clock signal to demodulate the address information when the select signal is inactive and for sampling the wobble signal using the second clock signal to demodulate the address information when the select signal is active.**

7. **Claim 11** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding independent claim 11, none of the references of record, alone or in combination suggest or fairly teach a decoder for demodulating address information using a wobble signal, including all of the limitations of claim 1, wherein **the demodulator samples the wobble signal using the first clock signal until the second clock signal is synchronized with the wobble signal and samples the wobble signal using the second clock signal after the second clock signal is synchronized with the wobble signal.**

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

8. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaTanya Bibbins whose telephone number is (571) 270-1125. The examiner can normally be reached on Monday through Friday 7:30 am - 5:00 pm.


Application/Control Number:
10/783,500
Art Unit: 2627

Page 9

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


LaTanya Bibbins


THANG V. TRAN
PRIMARY EXAMINER